The National Academies of
SCIENCES · ENGINEERING · MEDICINE

TRB
TRANSPORTATION RESEARCH BOARD

Comments from the Transportation Research Board for GN Docket No. 18-357: "5GAA Petition for Waiver to Allow Deployment of Cellular Vehicle-to-Everything (C-V2X) Technology in the 5.9 GHz Band" and ET Docket No. 13-49: "Revision of Part 15 of the Commission's Rules"

The Transportation Research Board is a program division of the National Academies of Sciences, Engineering, and Medicine, and is the largest convening body of transportation research professionals in the world. This year we had 13,300 participants in the TRB Annual Meeting and we have approximately 8,400 volunteers on our standing technical committees and research panels.

I want to make you aware of an issue of critical importance to many researchers and other participants in TRB: the preservation of the 5.9 GHz band of spectrum that the FCC has reserved for traffic safety. During the past few years, 35,000-38,000 people have lost their lives on U.S. roadways each year, and 2.4-3.0 million people have been injured. One way to reduce these deaths and injuries is for vehicles to be wirelessly connected to each other and to other road users like cyclists and pedestrians, so that appropriate information can be given to drivers and/or vehicles in advance of a collision occurring and appropriate action taken to avoid the collision. Another way is to connect vehicles to infrastructure, such as traffic signals, signs, and markings, thus providing information to drivers and/or vehicles that will provide safety information that will enable traffic to flow more smoothly and with less congestion, and result in safer driving conditions. Many of these solutions require the use of the 5.9 GHz band of spectrum that the FCC has reserved for traffic safety. Auto companies and state departments of transportation are already using this band of spectrum, and plan to expand its use significantly. European and Asian nations are rapidly expanding their use of the same technologies.

Beginning with a report that the National Academies issued in 2015 that reviewed the *USDOT Report on Connected Vehicle Initiative Communications System Deployment*[1], and continuing with numerous papers published in TRB's *Transportation Research Record* and presented at the TRB Annual Meeting, the importance of preserving the 5.9 GHz band of spectrum for traffic safety applications has been emphasized. The 2015 report was prepared by a committee of experts on the subject that were convened by the National Academies. The committee agreed with the USDOT report's conclusion that "proposed spectrum sharing in the 5.9 GHz band is the most serious risk and uncertainty for the program." Since the National Academies report was completed, many additional transportation professionals have written about the importance of preserving the band for transportation purposes. There have been 39 individually-authored papers either published in the *Transportation Research Record* or presented at the TRB Annual Meeting on the subject of DSRC or the 5.9 GHz bandwidth dedication to traffic safety. Many of these papers have been on successful applications of connected vehicles, both vehicle-to-vehicle and vehicle-to-infrastructure applications. Applications are growing rapidly as the benefits of use of the 5.9 GHz spectrum is being demonstrated.

[1] https://www.nap.edu/download/22166

500 Fifth Street, NW, Washington, DC 20001
Phone 202.334.2936 Fax 202.334.2920 www.TRB.org

Connected vehicle technology offers the opportunity to significantly improve traffic safety and reduce the tragedy of traffic fatalities and injuries that occur on U.S. roadways each year. I would be pleased to offer any additional information from TRB publications on this issue or offer the names of experts on connected vehicles and connected vehicle technology who can provide additional information on this important issue.

Neil J. Pedersen
Executive Director
Transportation Research Board